

FIG. 1

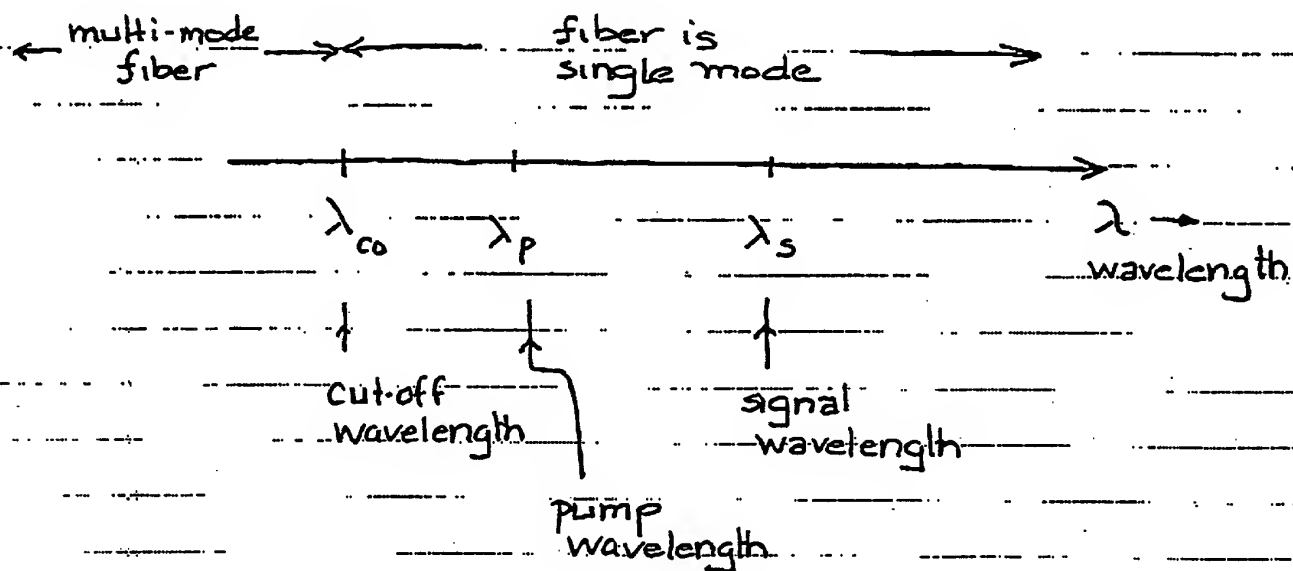


FIG. 2

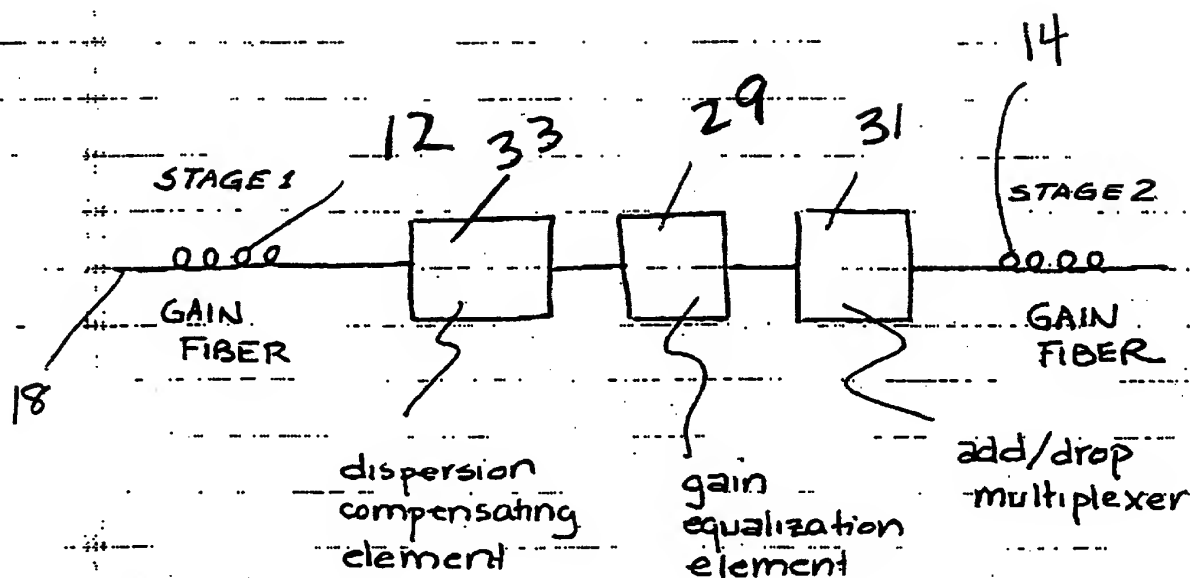


Fig. 3

201040 6584001

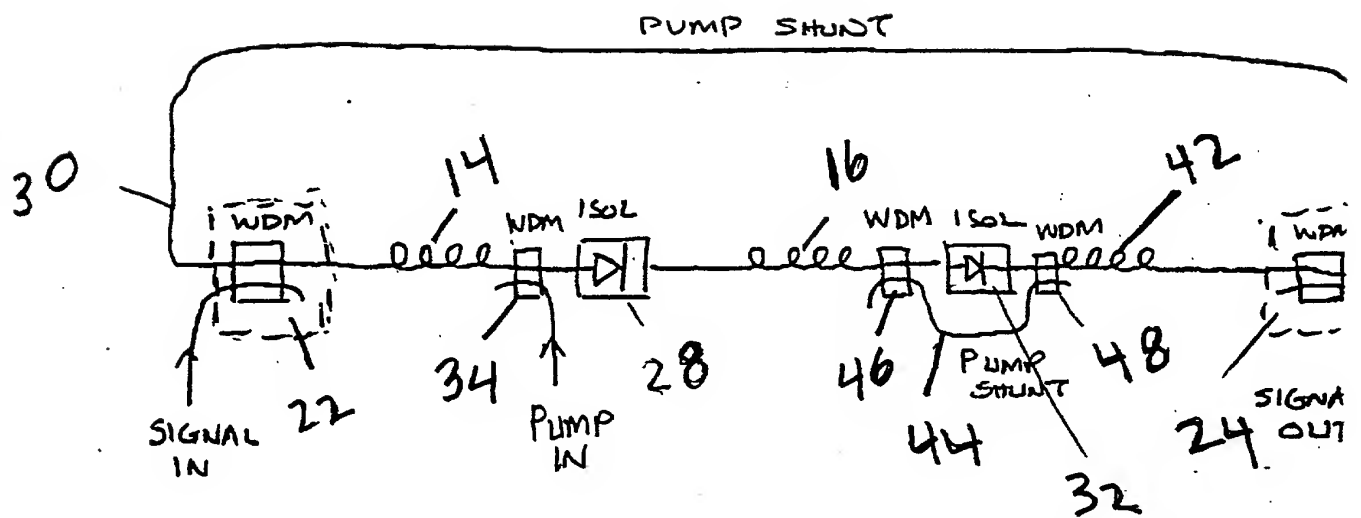


FIG. 4

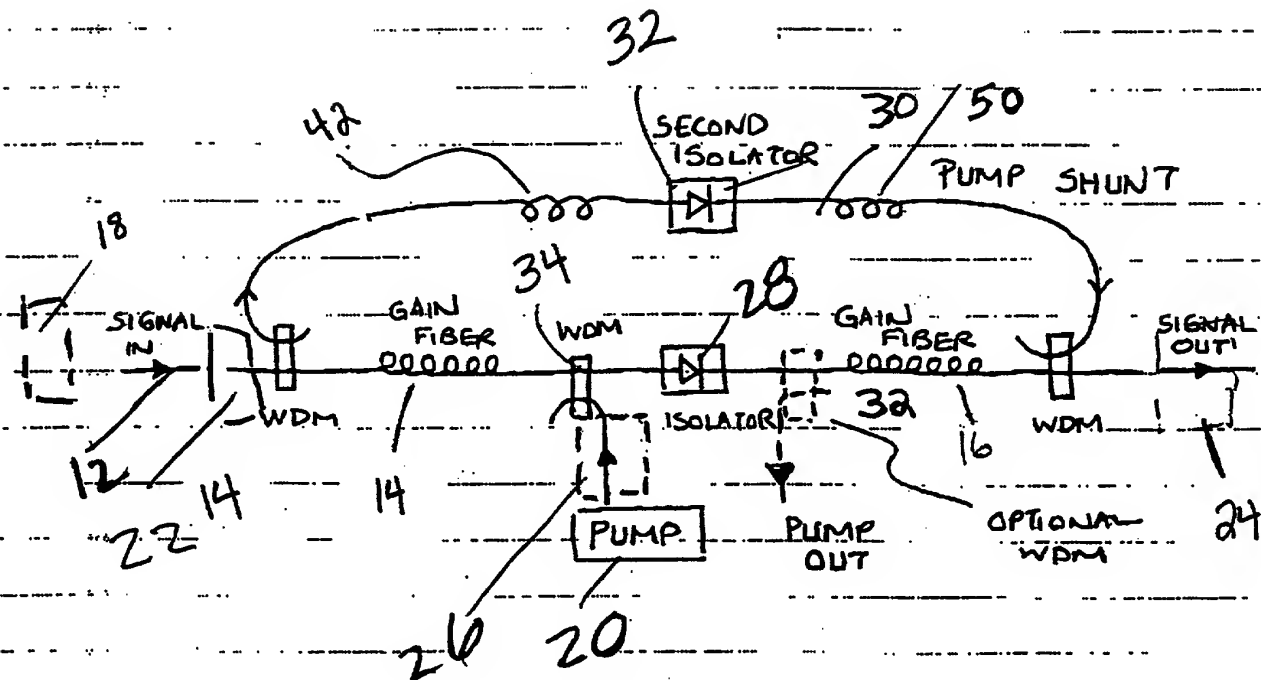


FIG. 5

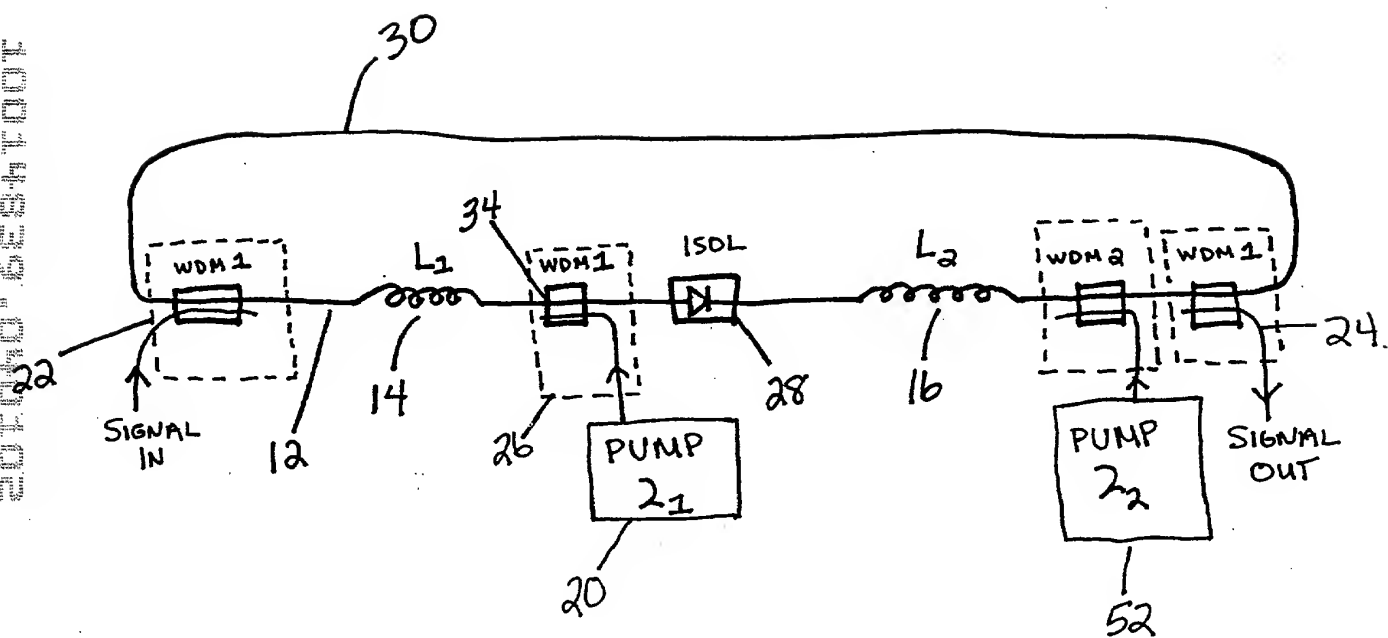


FIG. 6

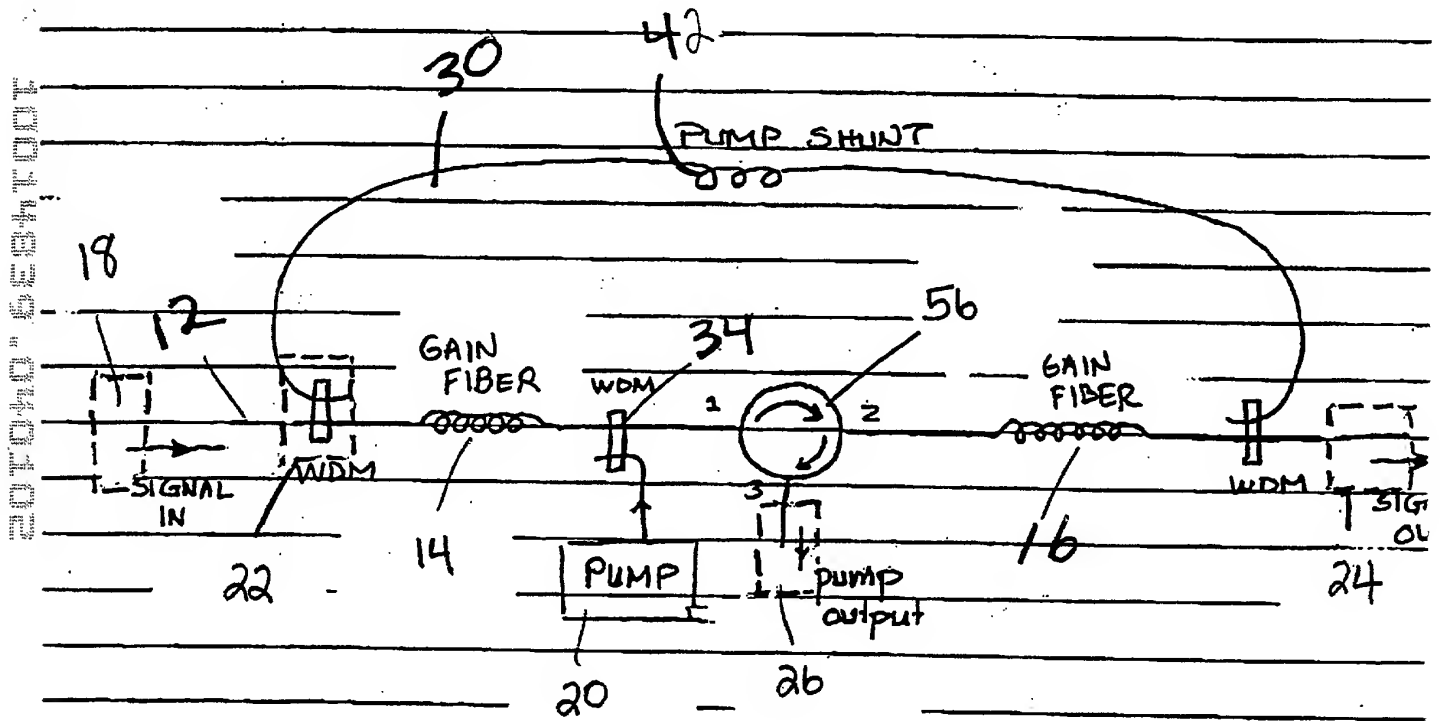


FIG. 7

The diagram illustrates a pump-probe system. A dashed box labeled 18 represents the quantum device. A 'SIGNAL IN' arrow points to the device. The system includes two waveguides, 14 and 16, which are connected by a series of small circles. Waveguide 14 contains a waveguide mode (WDM1) and a pump (PUMP 2₁) with a frequency of 20. Waveguide 16 contains a waveguide mode (WDM2) and a pump (PUMP 2₂) with a frequency of 52. An isolator (ISOL) is placed between the two waveguides. The output of the system is labeled 'SIGNAL OUT' and is connected to a dashed box labeled 24. The entire system is labeled 10.

FIG. 8

10044939 000102

FIG. 8b

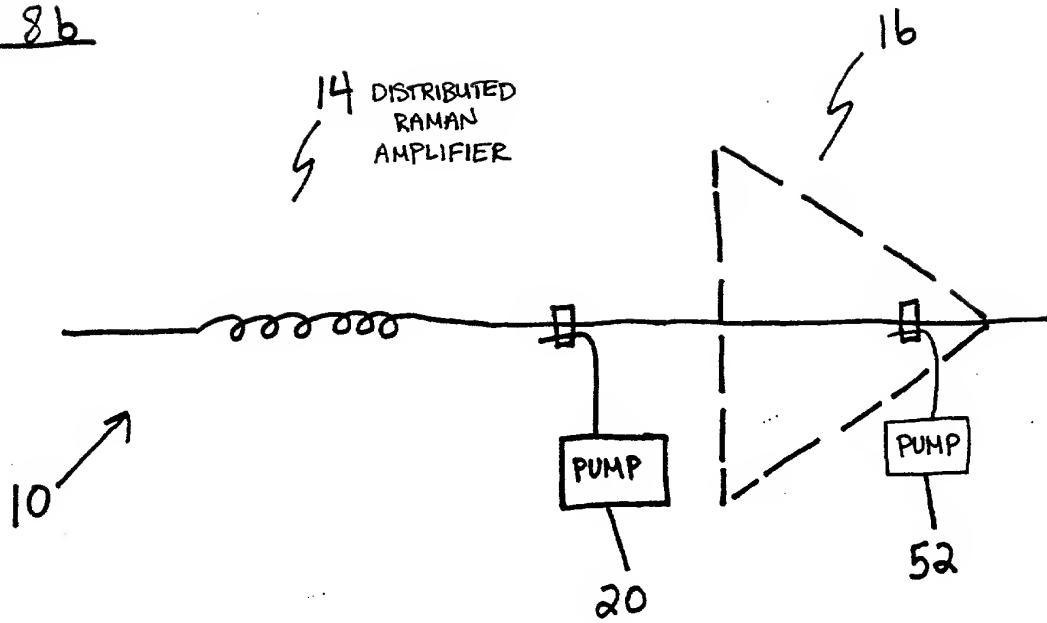
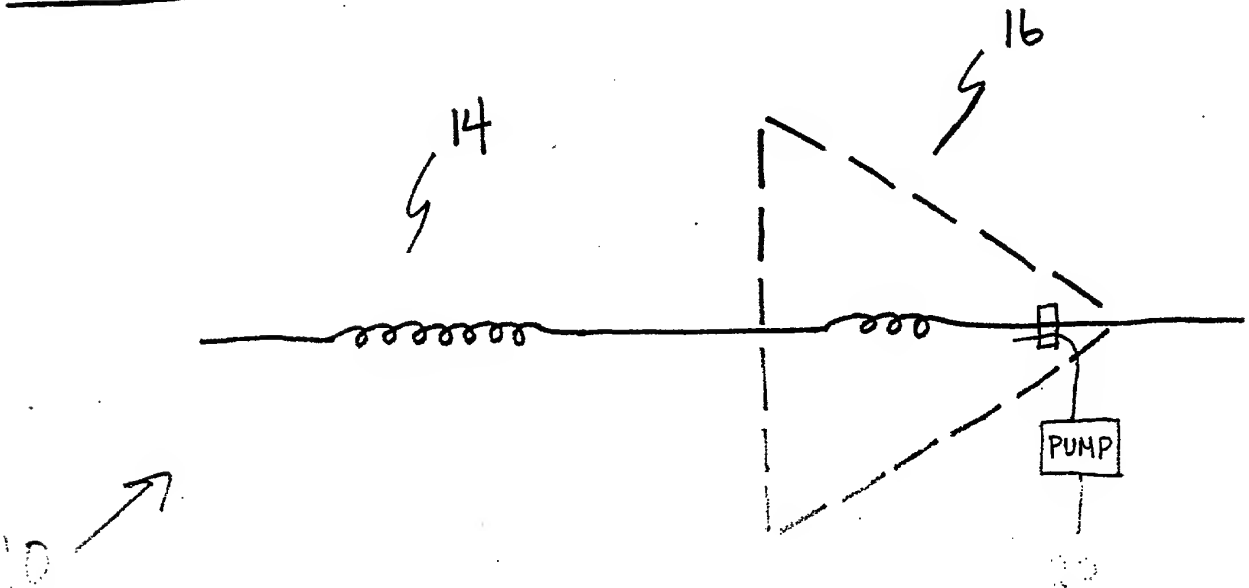


FIG. 8c



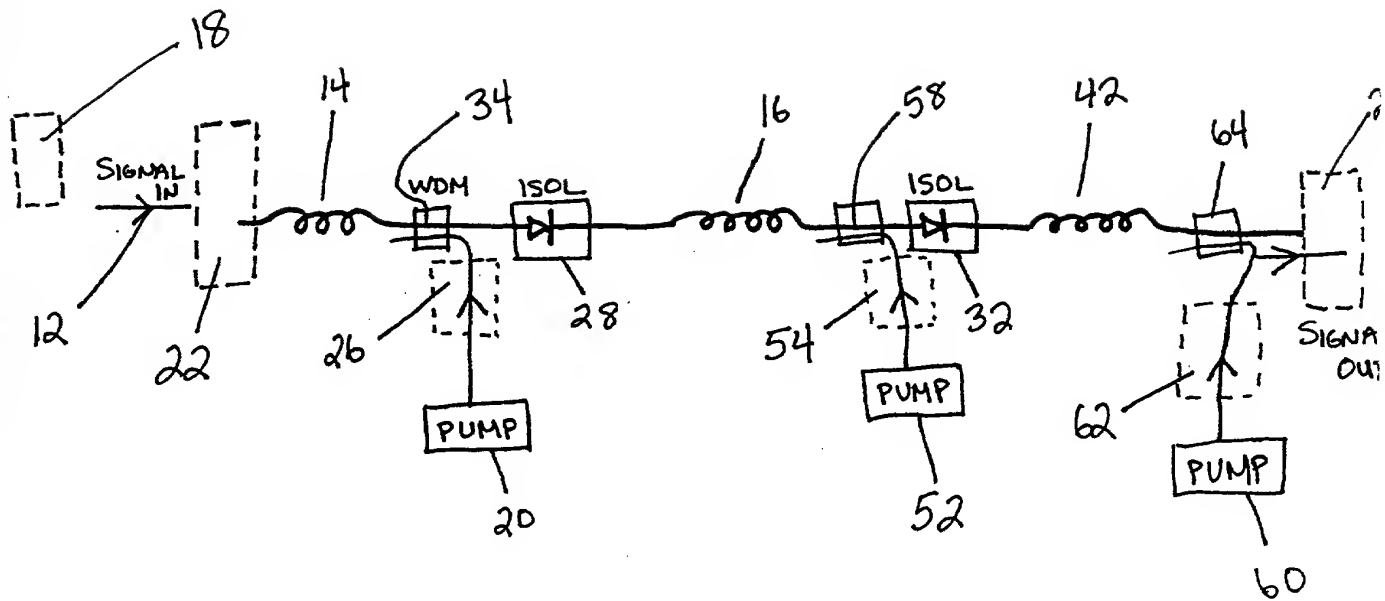


FIG. 9

PUMP

=

4 LD COMBINATION

PUMP
SOURCE

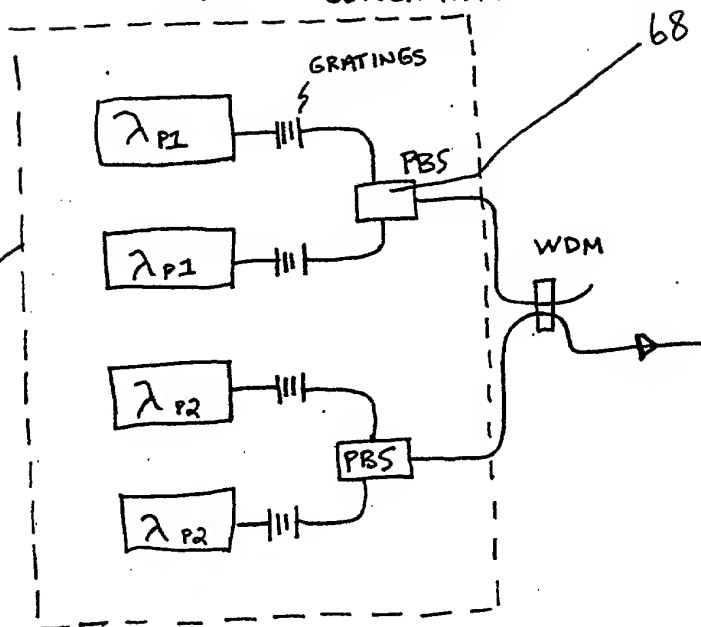


FIG. 10

8 LD COMBINATION

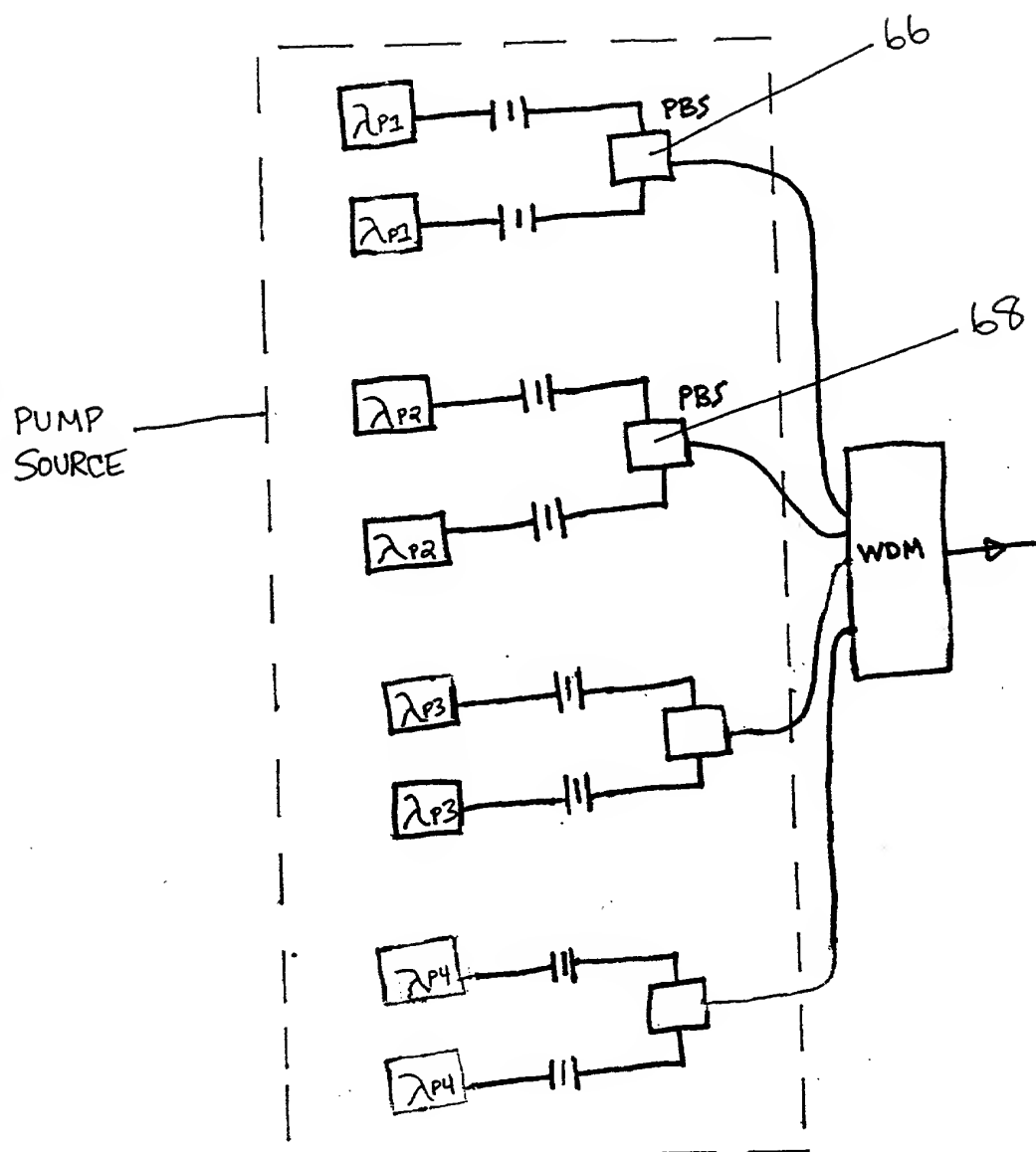


FIG. 11

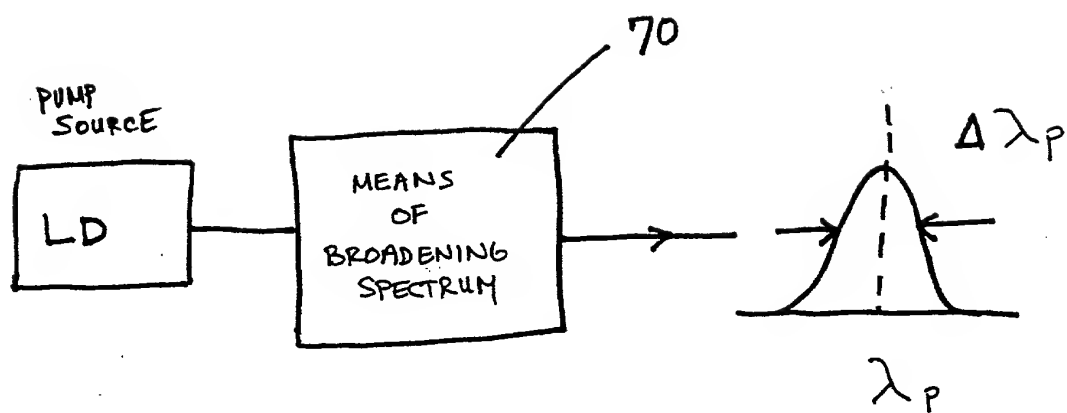


FIG. 12

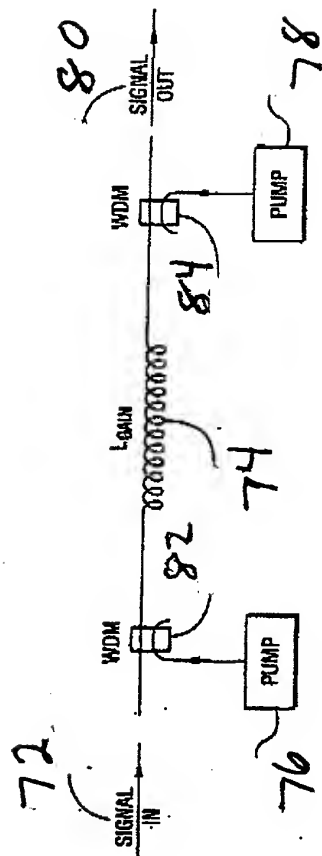
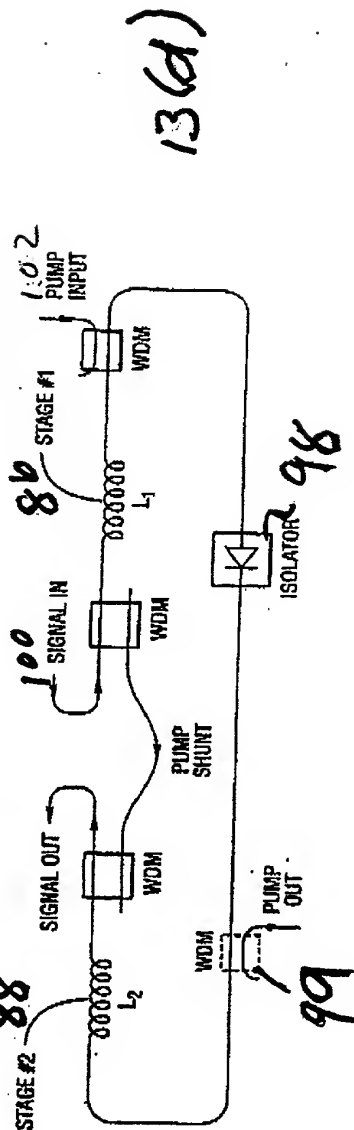
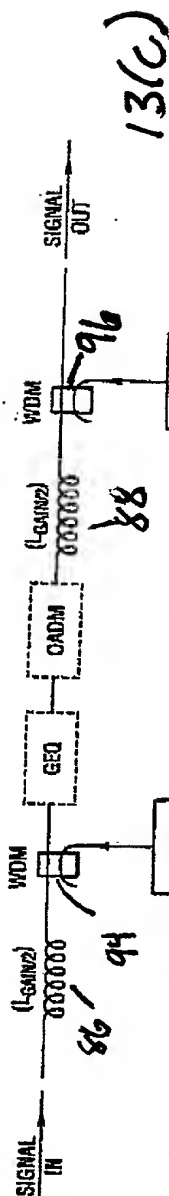
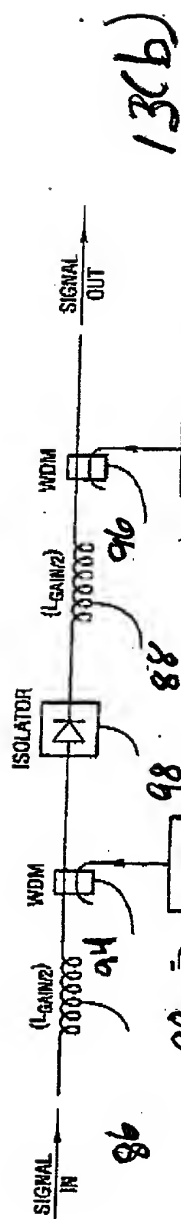


Fig 13(a)



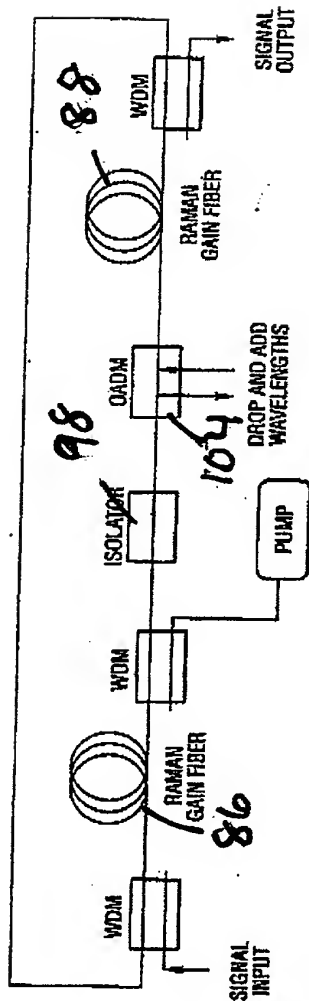


Fig 13(e)

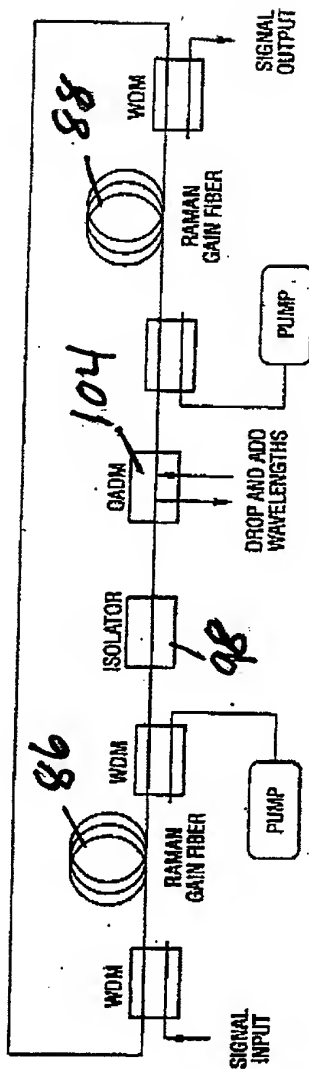
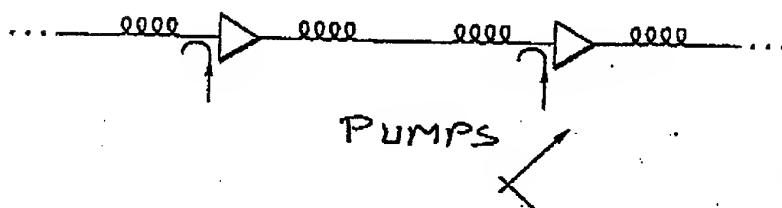
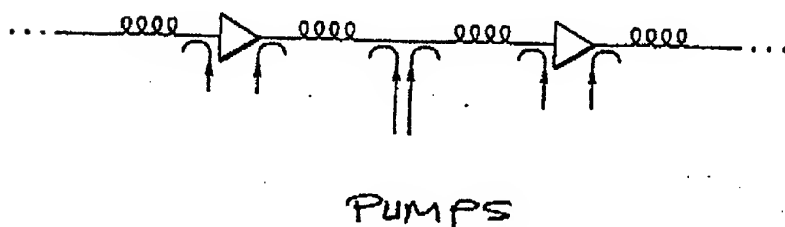
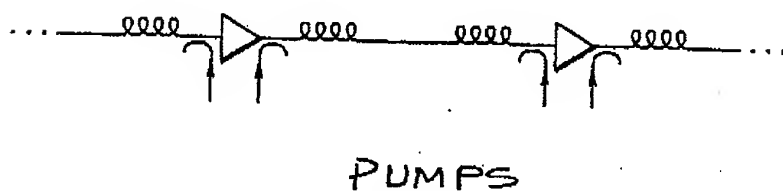
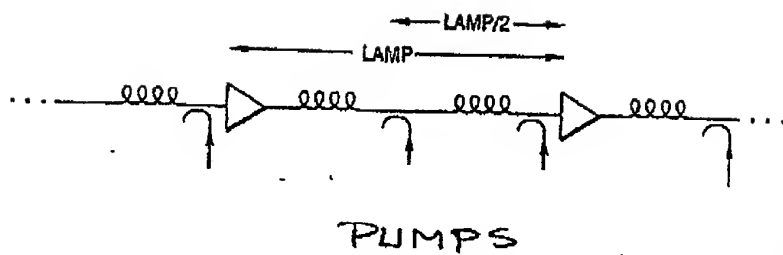
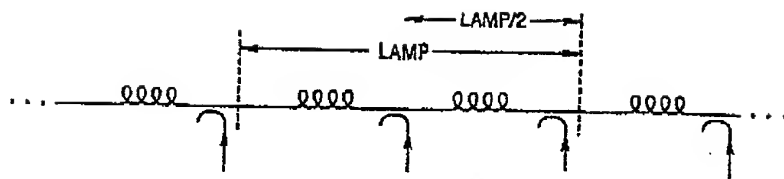


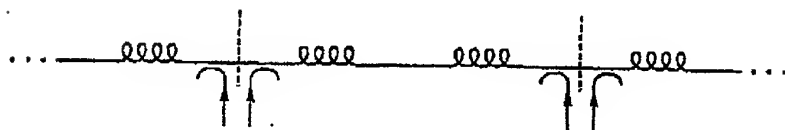
Fig 13(f)





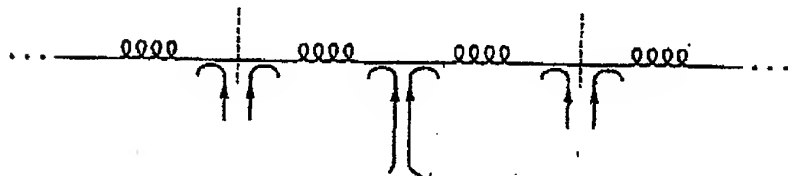
PUMPS

Fig. 15(a)



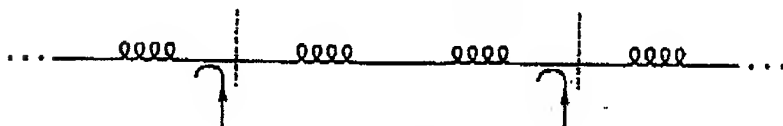
PUMPS

Fig. 15(b)



PUMPS

Fig. 15(c)



PUMPS



Fig. 15(d)

106

112 110

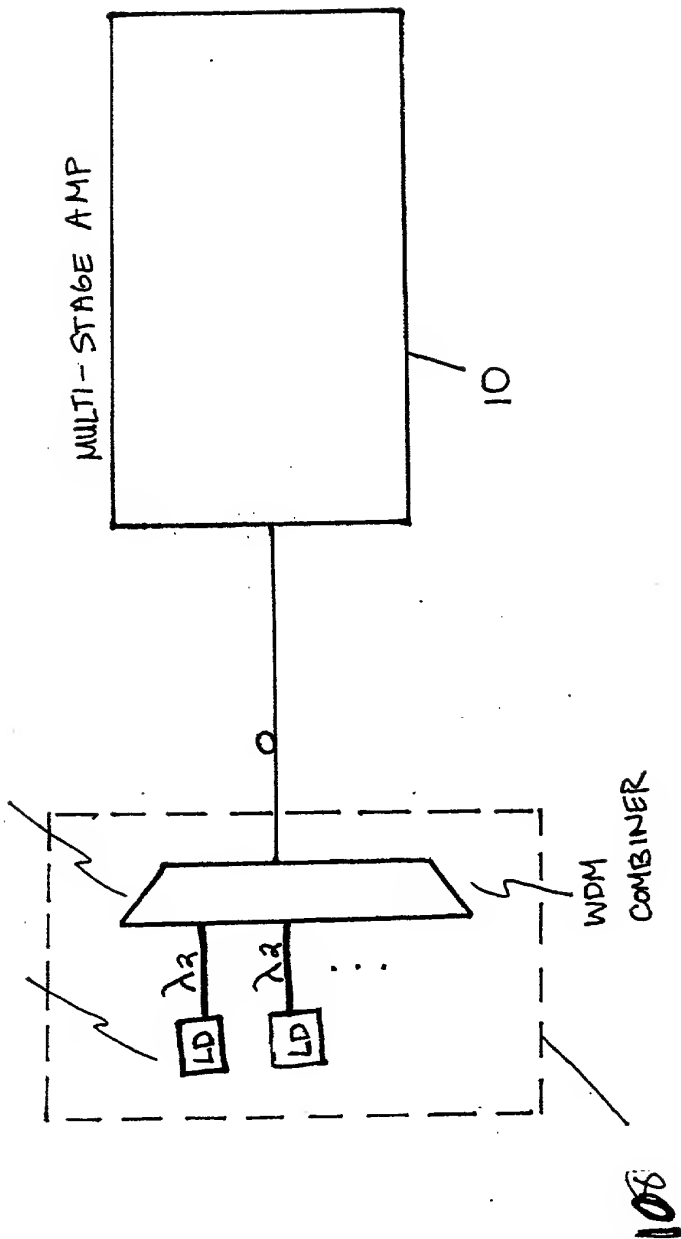
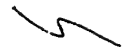


FIG. 1b

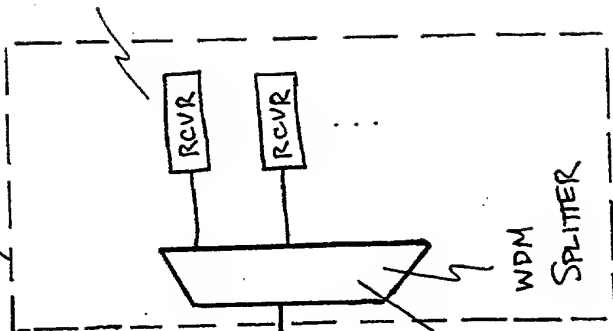
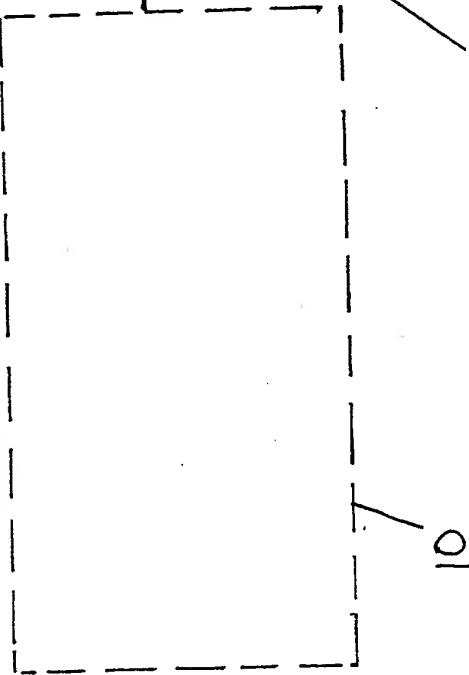
113



114

118

MULTI-STAGE AMP



116

FIG. 17

120

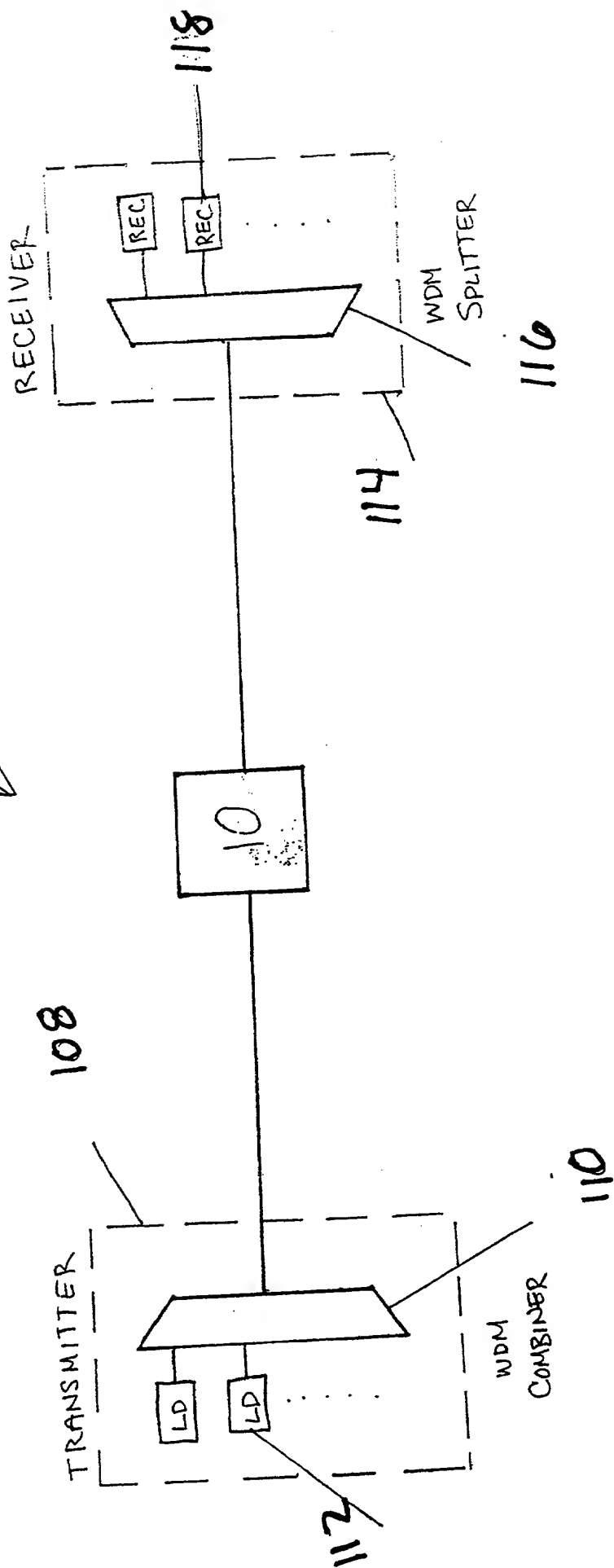


FIG. 18

122



124

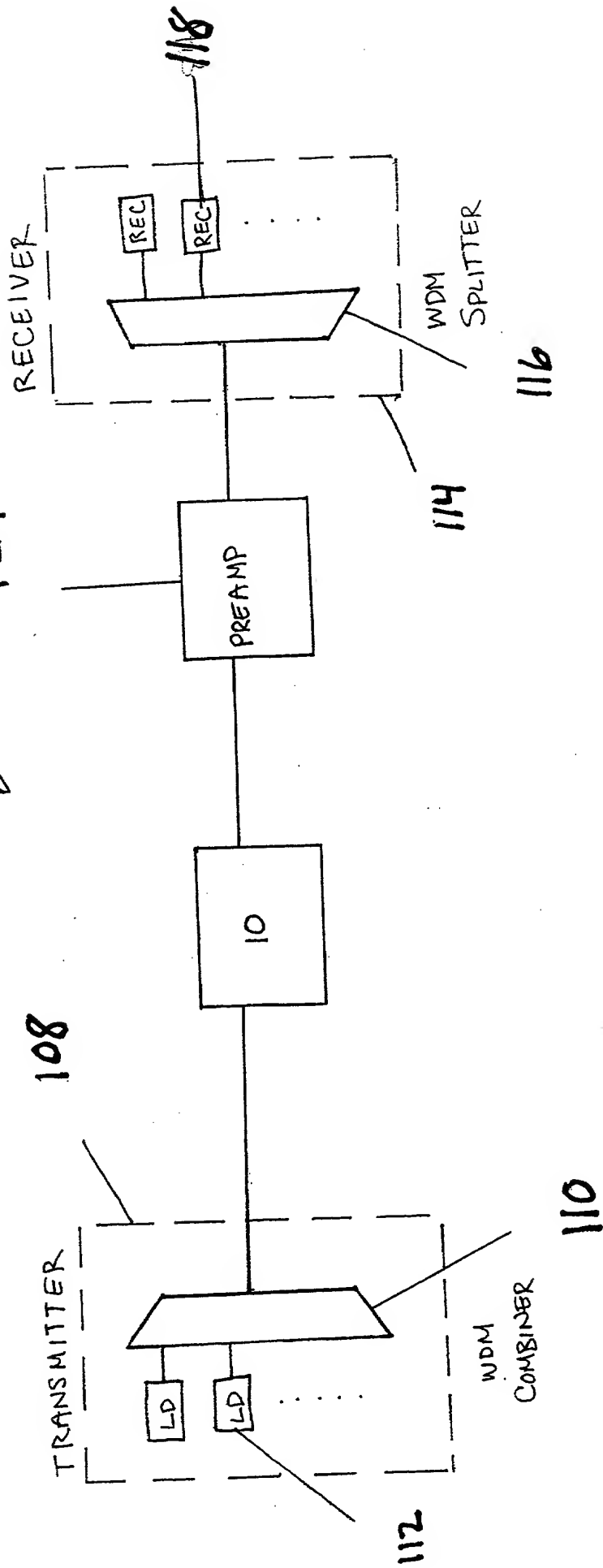


FIG. 19

126

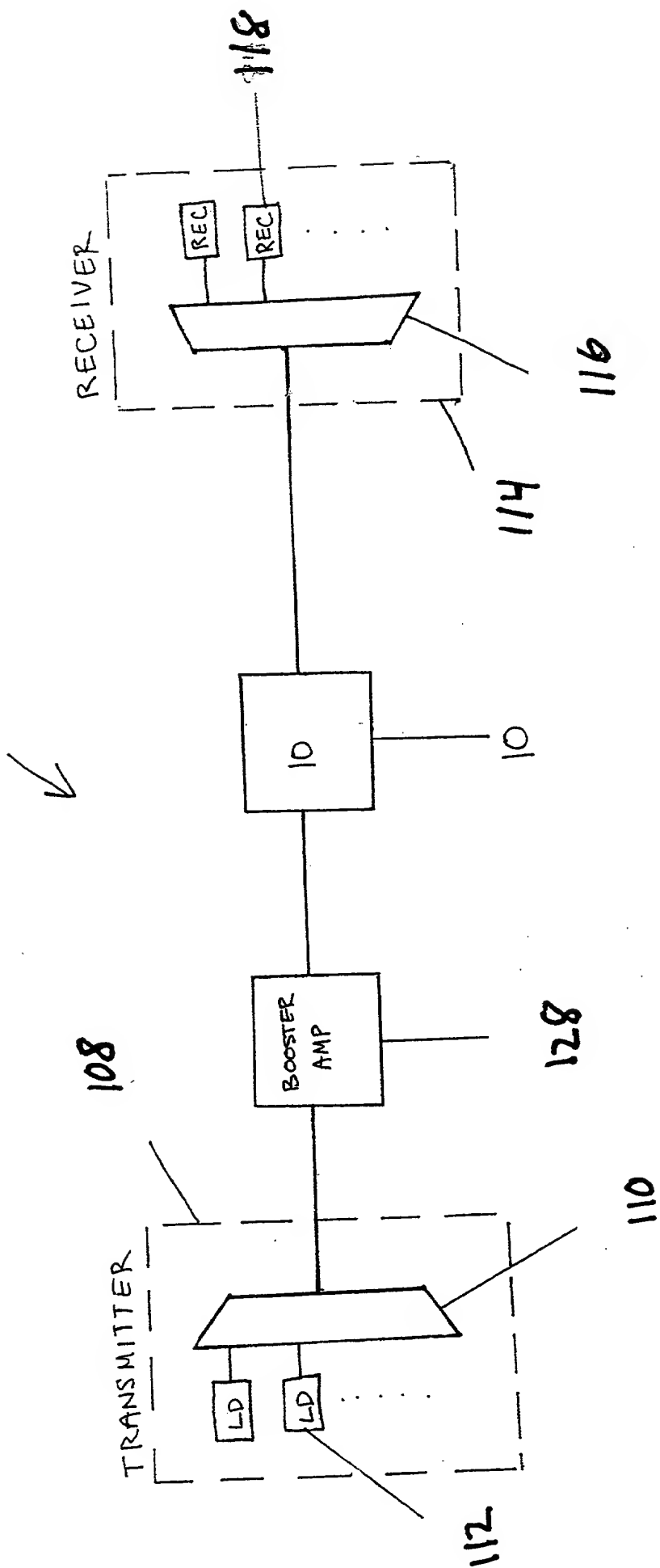


FIG. 20

130

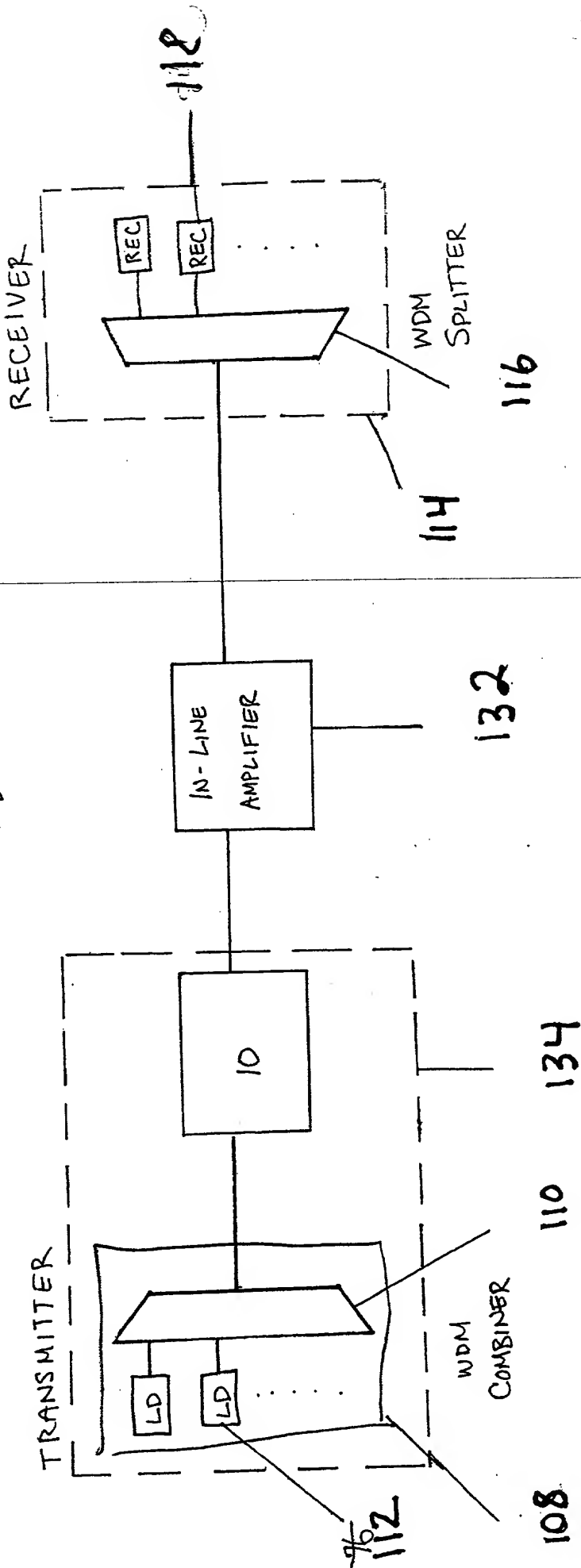


Fig. 21

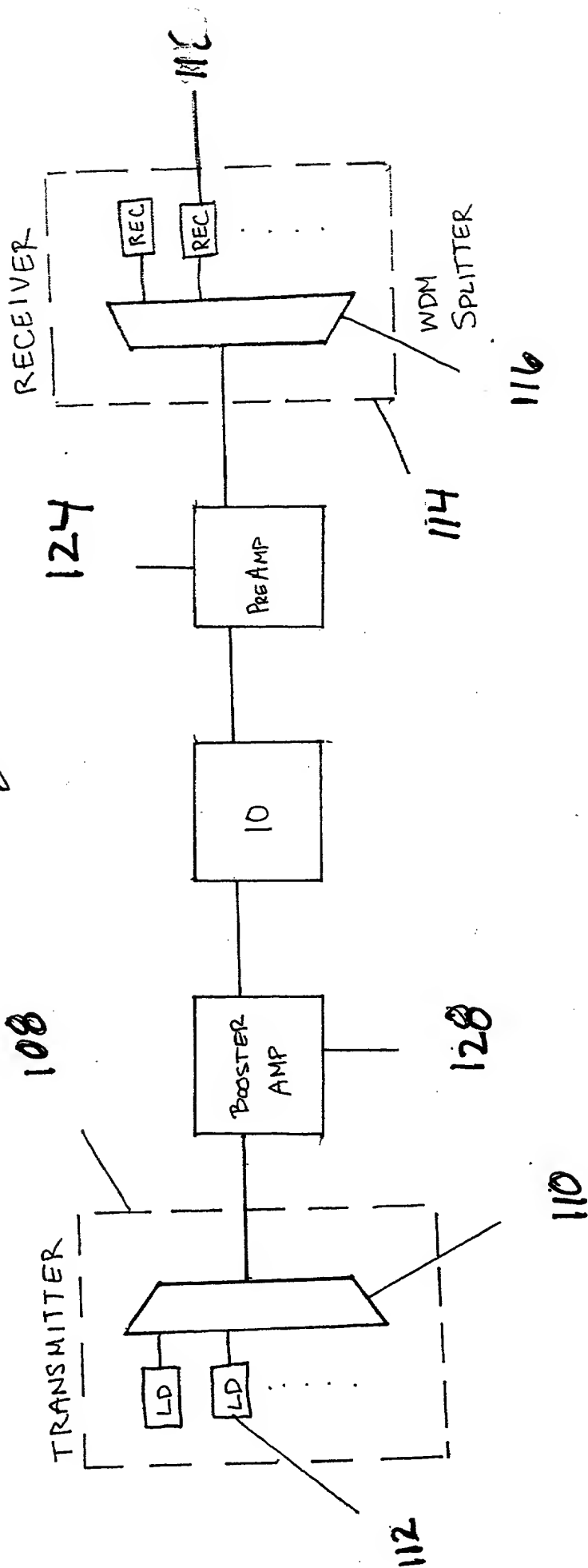


FIG. 22

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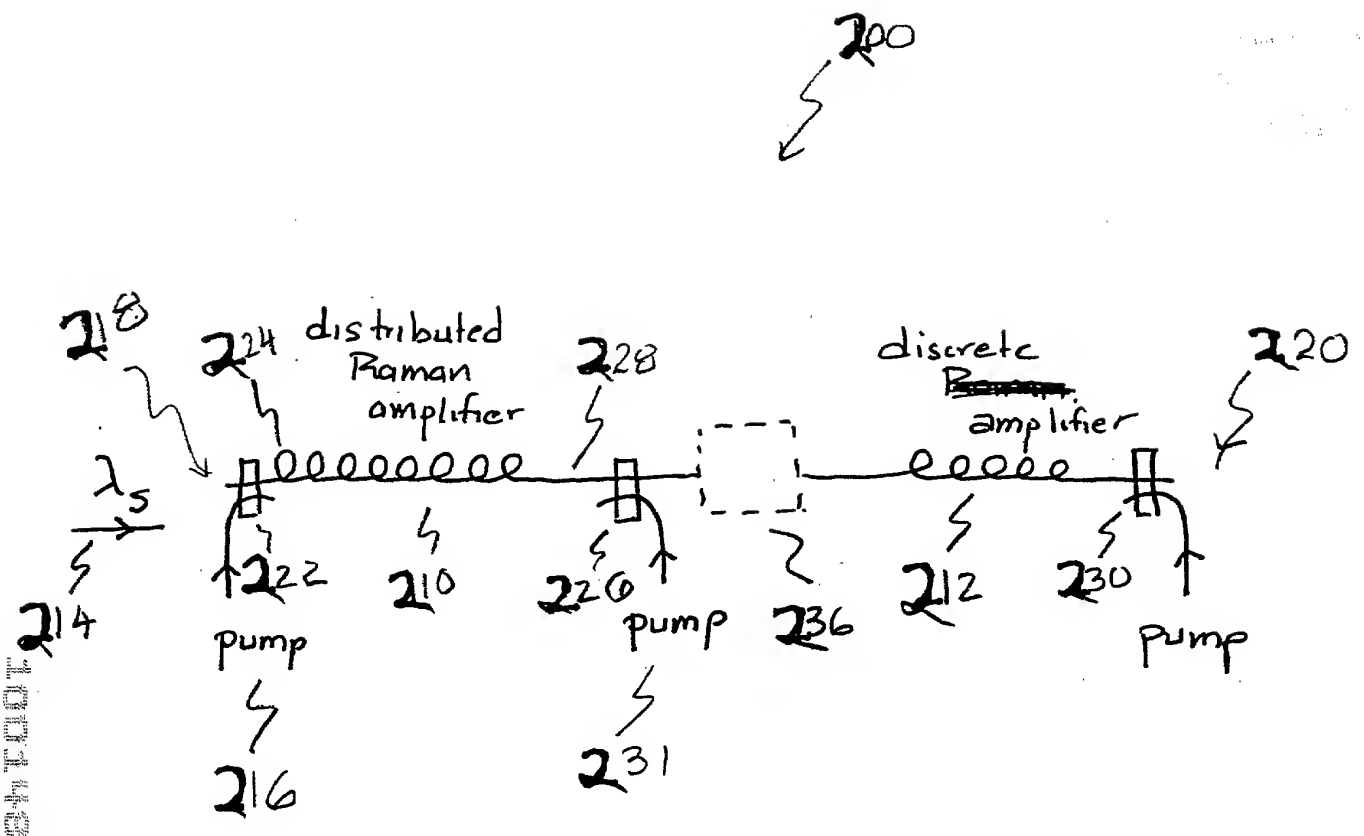


Fig 23 (a)

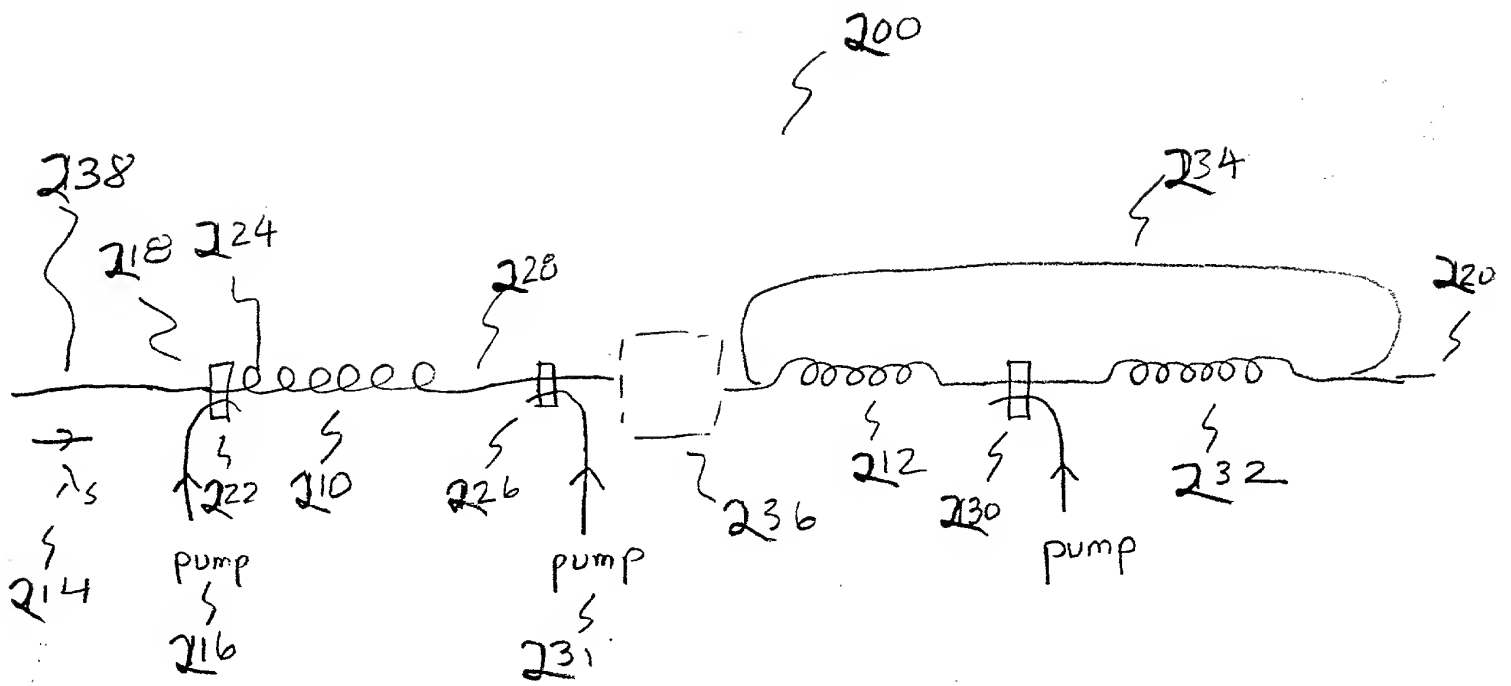


Fig 23 (b)

Transmitters

Receivers

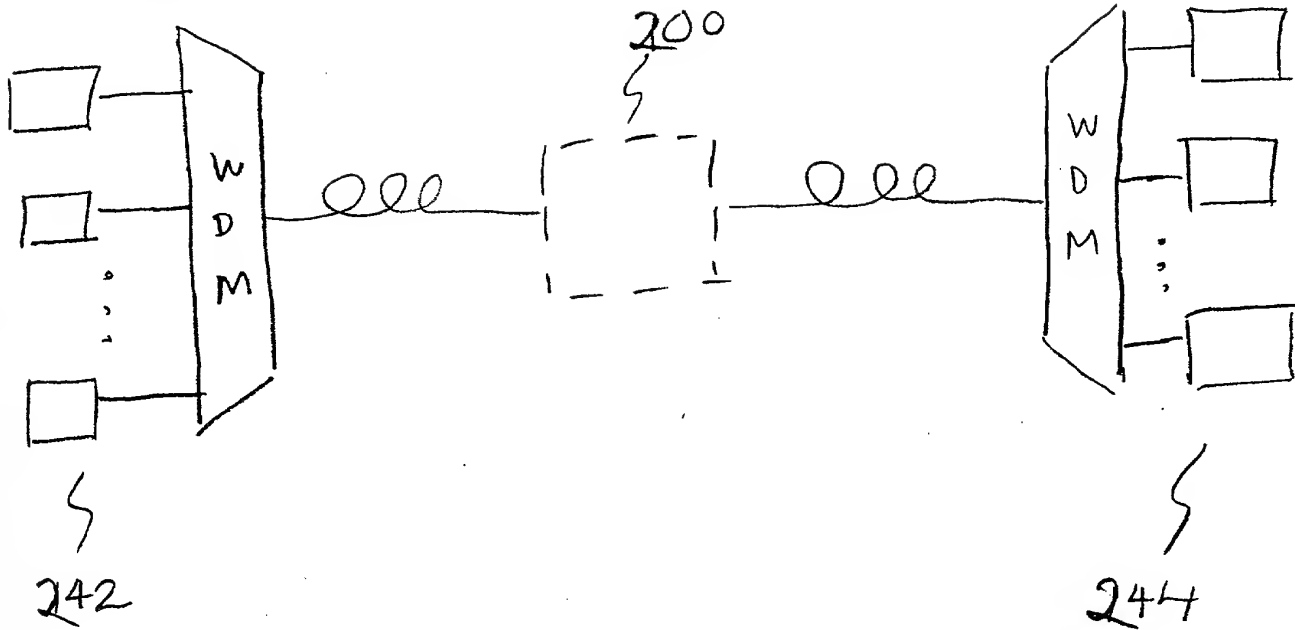


Fig 23.(c)

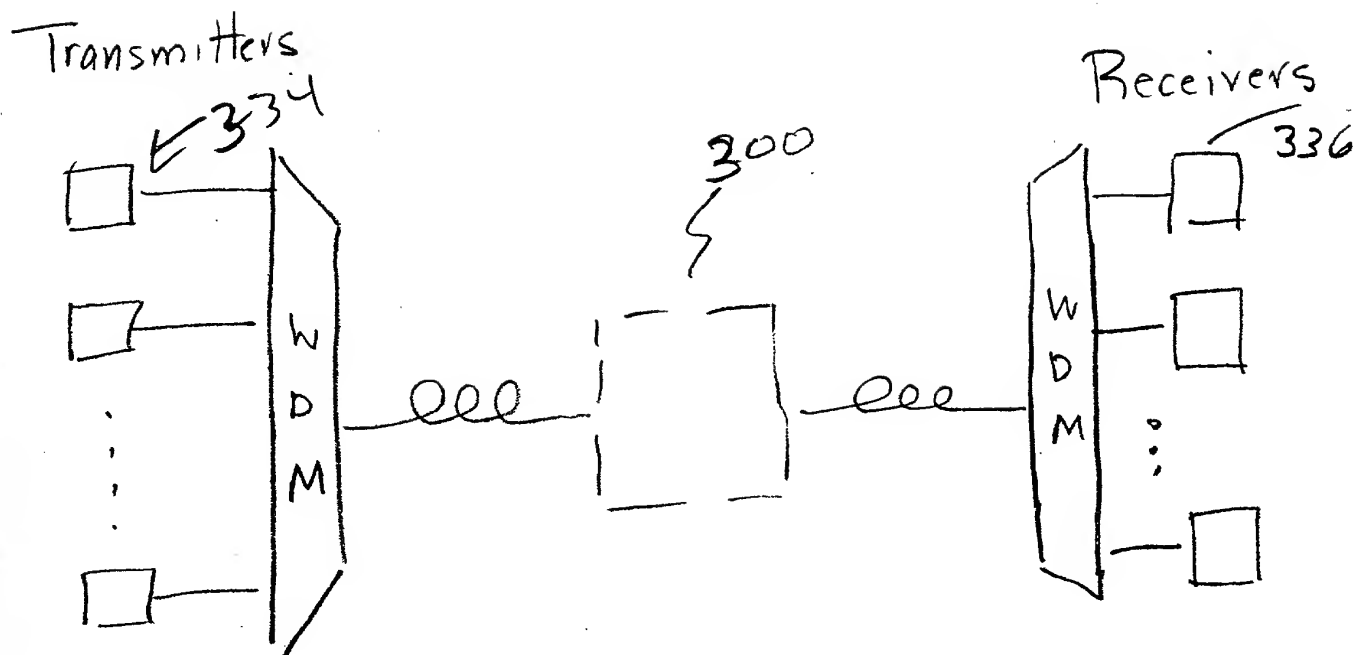


FIG. 24(b)

416

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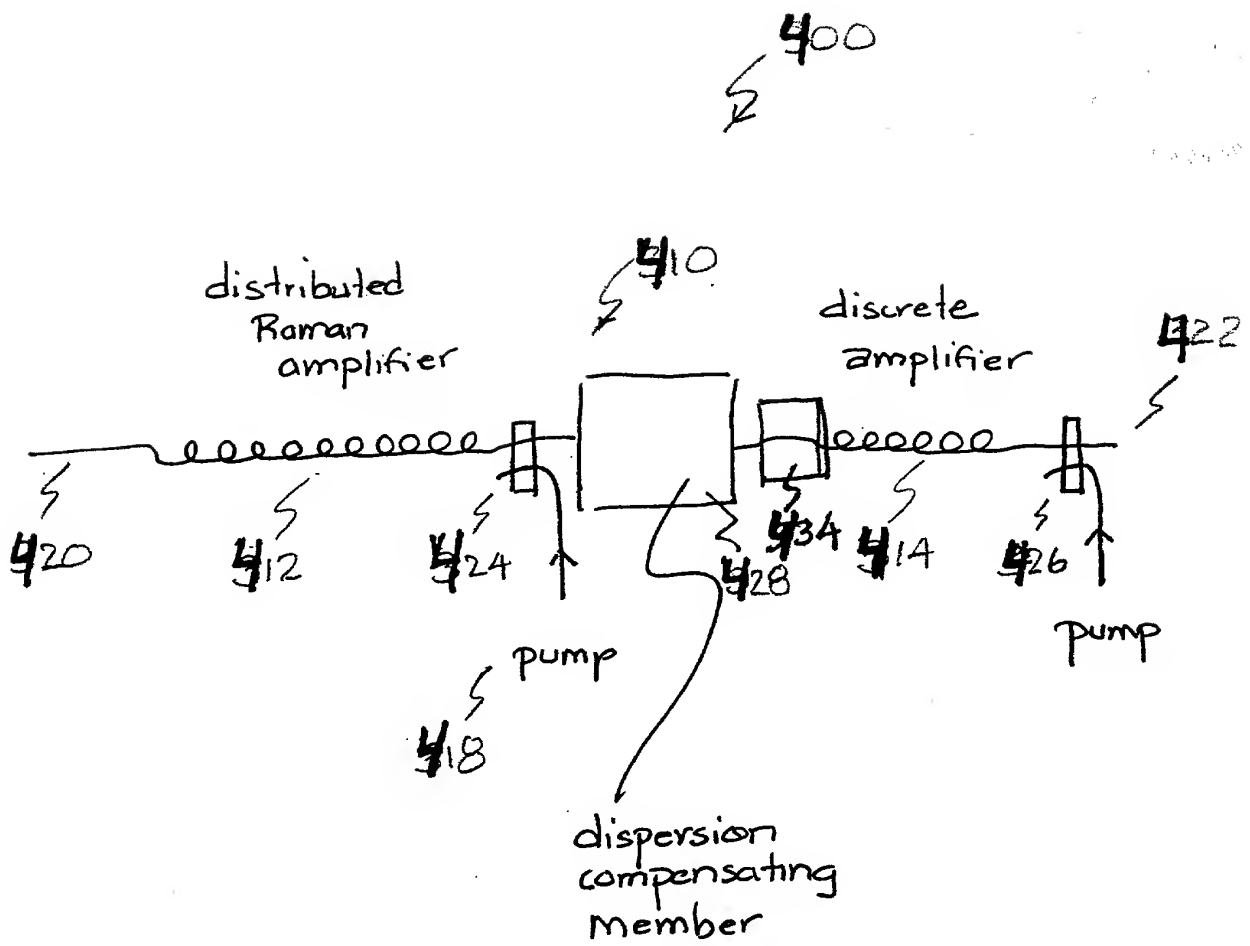


Fig 25(a)

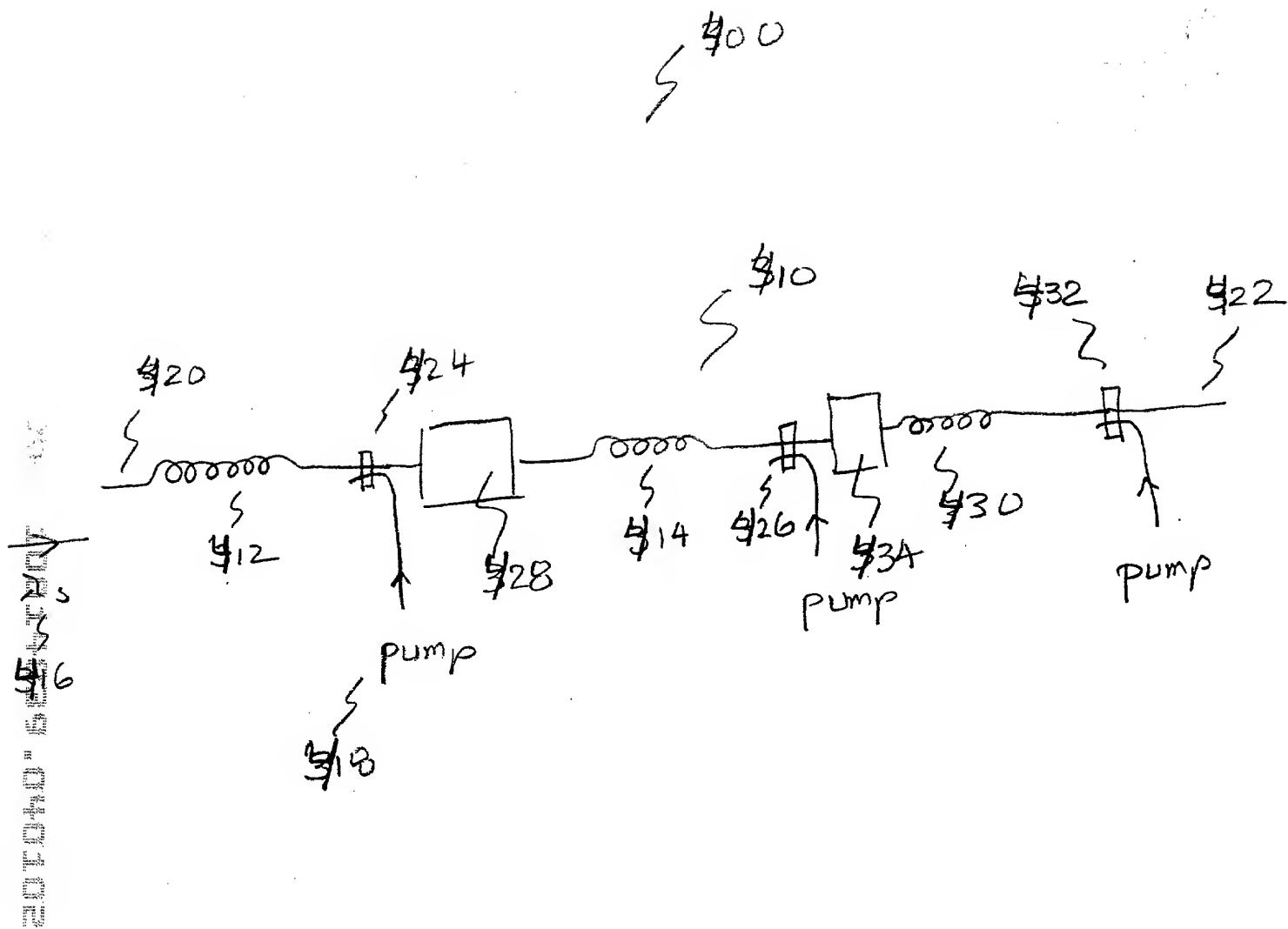


Fig. 25(b)

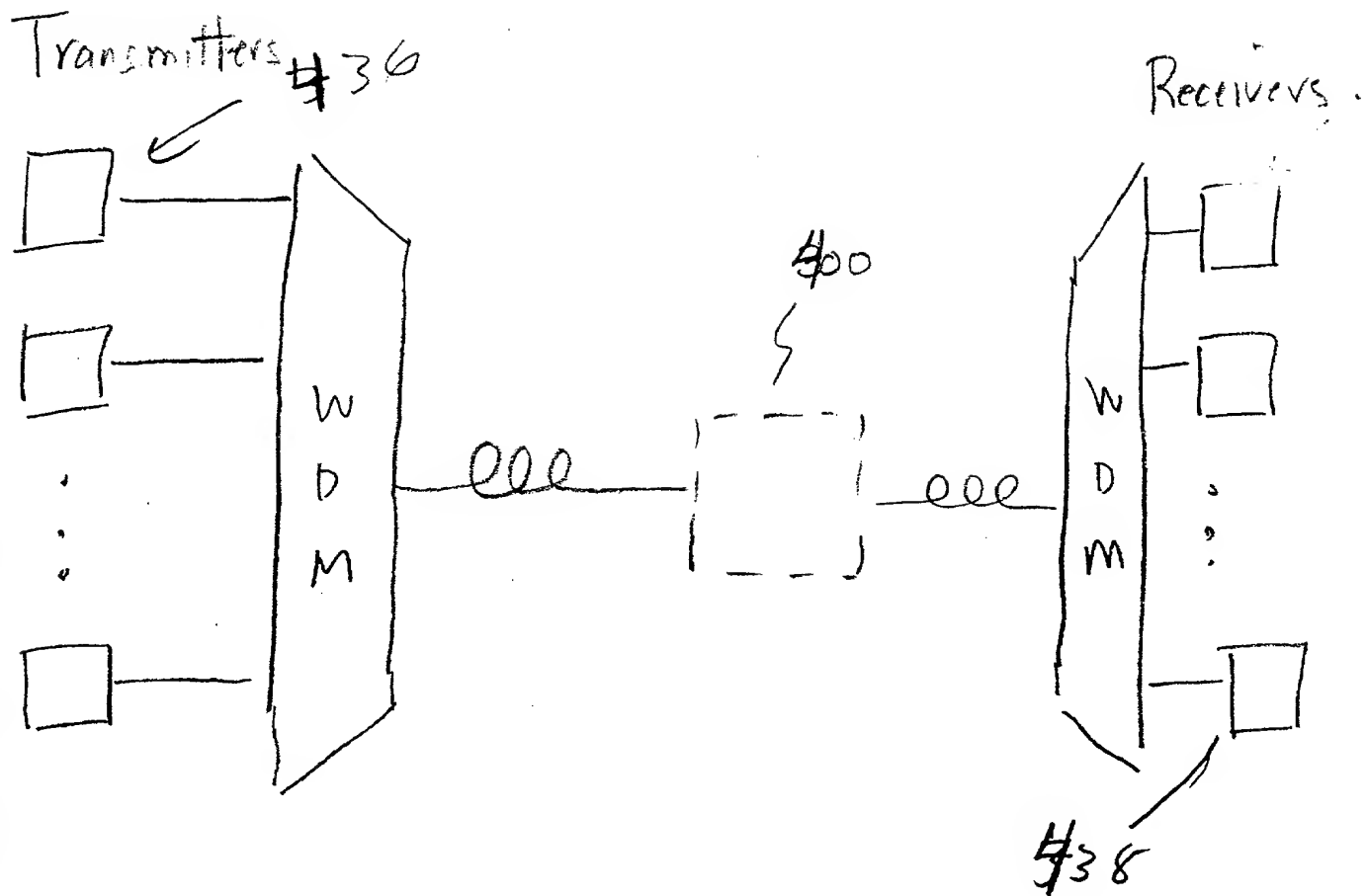


FIG 25.(C)

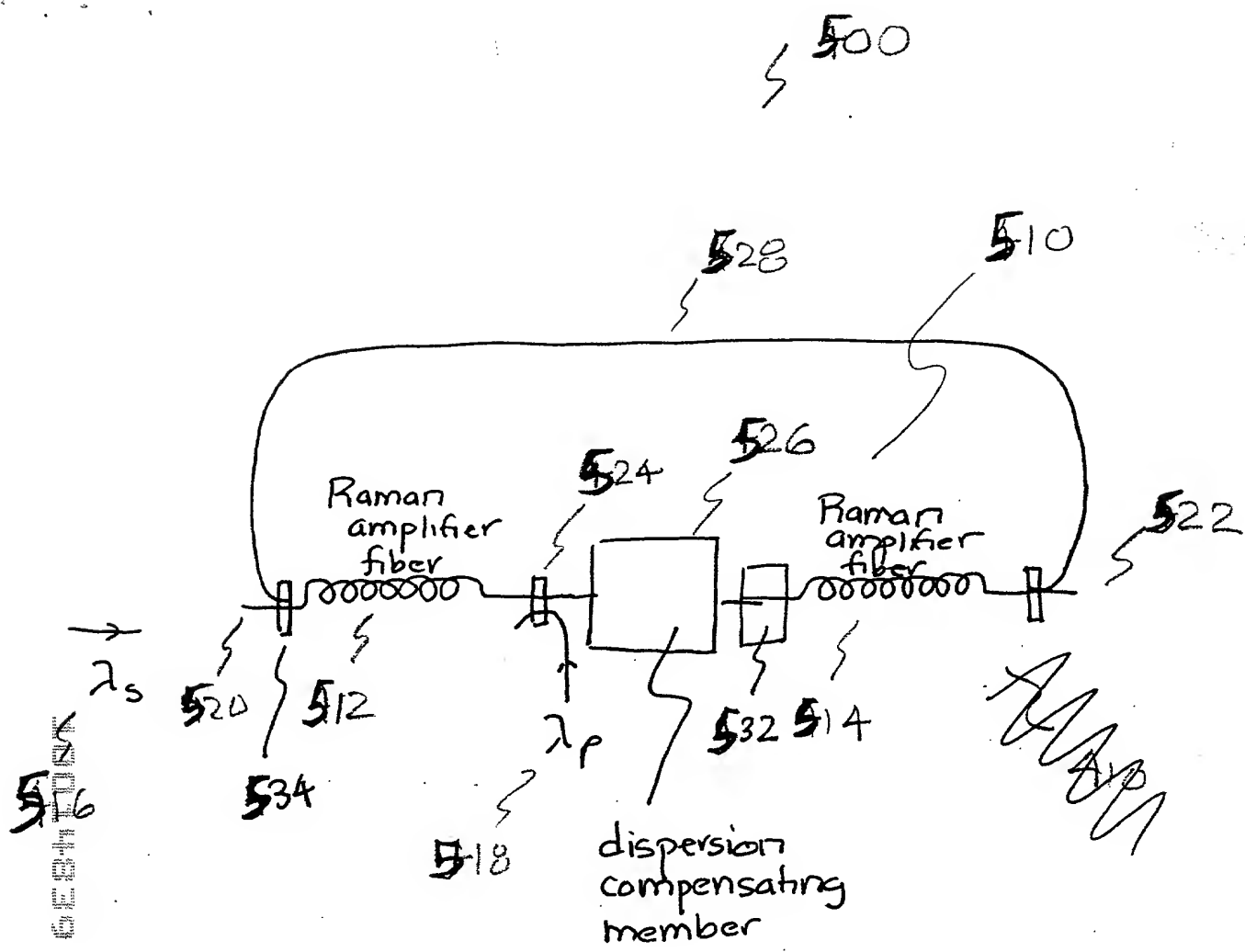


Fig 2 (a)

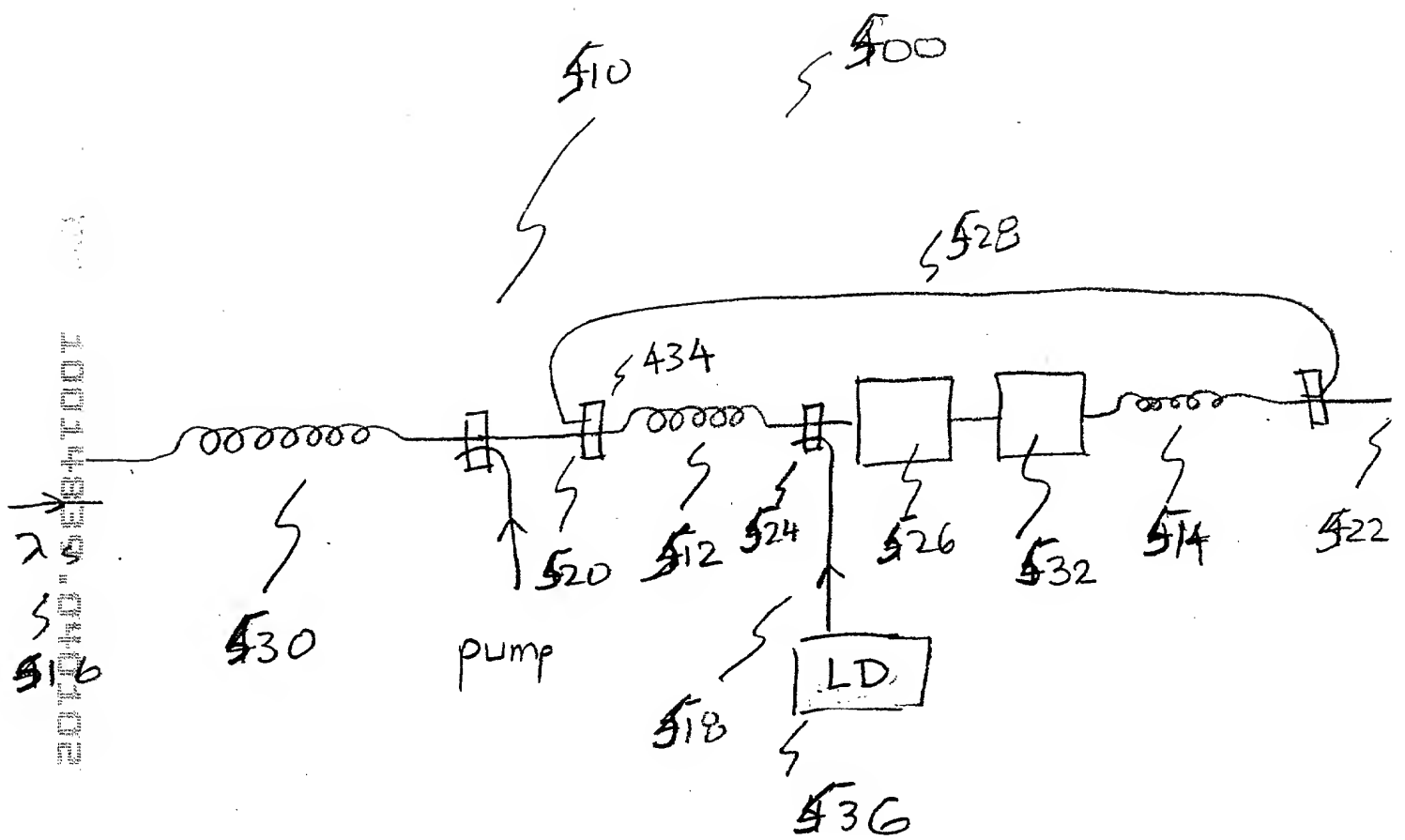


FIG 2-6 (b)

Transmitters

Receivers

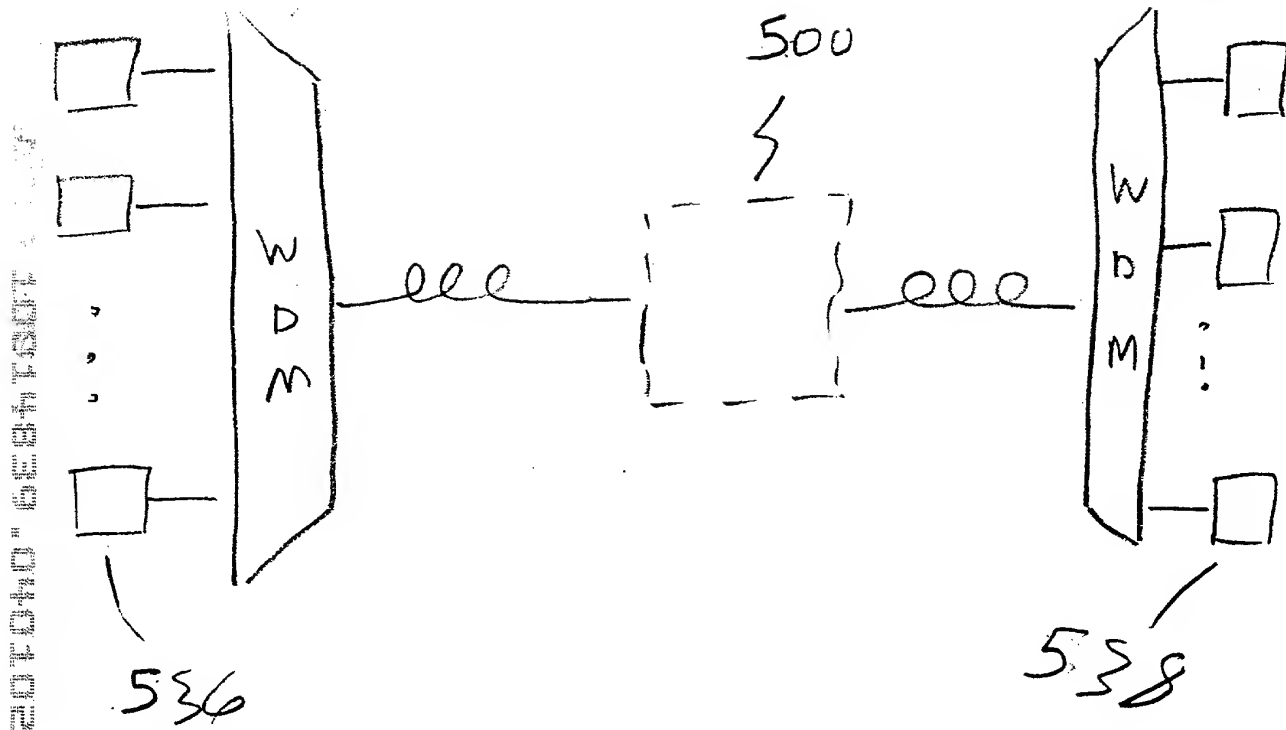


FIG. 26(c)